

CLAIMS

1. A chemical mechanical polishing (CMP) composition comprising as an oxidizer, at least one halogen derivative and dissolved oxygen. 5
2. The composition of claim 1 wherein said halogen derivative is a chlorine derivative.
3. The composition of claim 1 in the form of a slurry.
4. The composition of claim 2 or 3 having an alkaline pH. 10
5. The composition of claim 2 or 3 for polishing copper metal.
6. The composition of claim 1 or 2, further comprising a complexing agent. 15
7. The composition of claim 6 for polishing copper metal, wherein said complexing agent is selected from the group of organic hydroxy acids, ammonia and EDTA.
8. The composition of claim 2 or 3, wherein said dissolved oxygen concentration is enhanced by at least intermittently bubbling air, oxygen or ozone through the CMP composition. 20
9. A method for processing a surface of a structure, comprising delivering a fluid CMP composition onto said structure and applying chemical mechanical polishing process to said structure while periodically interrupting said mechanical polishing process, thereby enabling improved chemical polishing reaction between said CMP composition and said structure. 25
10. A method according to claim 9 for planarizing a surface of a structure, said structure including at least one conducting or semiconducting layer. 30

11. The method of claim 9 or 10, wherein said CMP process comprises mechanically abrading and removing at least a portion of the surface of a structure by bringing a pad into contact with said surface and moving the pad in relation to the structure.

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12. The method of Claim 11, wherein said pad is moved in a circular manner.

13. The method of claim 11, wherein movement of said pad is interrupted intermittently.

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14. The method of claim 11, wherein movement of said pad is interrupted at least once.